

REMARKS

(a) In the present Amendment, independent Claims 1 and 2 have been amended to replace the recitation “silver containing component” with “particulate silver compound” to place the claims consistent with the originally filed claims.

Claims 1 and 2 have also been amended to recite the composition of the particulate silver compound. Accordingly, Claim 3 has been canceled.

Claims 1 and 2 have also been amended to recite the composition of the binder. Accordingly, Claims 5 and 8 have been canceled. Claim 7 has been amended consistent with the amendments to Claims 1 and 2.

Independent Claims 16-19 have been added. Support is found, for example, in originally filed claims 1-3; originally filed specification at p. 3, ll. 16-20; and Example 2, Tables 2-A and 2-B of the present application.

No new matter has been added, and entry of the Amendment is respectfully requested. Upon entry of the Amendment, Claims 1, 2, 4, 6, 7 and 9-19 will be pending.

(b) Referring to page 2 of the Office Action, Claims 1-15 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. In addition, referring to page 3 of the Office Action, Claims 1 and 2 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

Without acquiescence in the merits of the rejection, to advance prosecution, Applicants have amended Claims 1 and 2 to recite a “particulate silver compound” as originally filed.

Reconsideration and withdrawal of the Section 112 rejections are respectfully requested.

(c) Referring to Paragraph No. 1 on page 4 of the Office Action, Claims 1-6 and 9-15 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by, or in the alternative,

under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Pub. No. 2003/0124259 (“Kodas”). In addition, referring to Paragraph No. 2 on page 5 of the Office Action, Claims 7-8 and 10 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kodas.

Applicants traverse and respectfully request the Examiner to reconsider in view of the amendments to the claims and the following remarks.

The Examiner cites Kodas as teaching “a precursor composition comprising a dispersion of a molecular metal precursor such as silver oxide, silver acetate, or silver salts in vehicles such as terpinol, toluene or ethylene glycol. The precursor composition further contained binders such as ethyl cellulose, epoxy, phenolic resin and polyester.” (*See* Office Action at p. 4, ll. 18-21.)

However, Kodas discloses that:

The precursor compositions in accordance with the present invention can also include one or more polymers. . . . The polymers can be thermoplastic polymers or thermoset polymers. Thermoplastic polymers are characterized by being fully polymerized. . . . Examples include polyimide films, ABS plastics, vinyl, acrylic, styrene polymers of medium or high molecular weight, and the like. . . . Specific examples of thermoset polymers include amine or amide-based epoxies such as diethylenetriamine, polyglycoldianine and triethylenetetramine. Other examples include imidazole, aromatic epoxies, brominated epoxies, thermoset PET, phenolic resins such as bisphenol-A, polyimide, acrylics, urethanes, and silicones.

(*See* Kodas at ¶¶ [0099] and [0102].)

The above-noted sections of Kodas fail to disclose “ethyl cellulose.” In this regard, Kodas discloses that that “[t]he precursor compositions of the present invention can in addition include rheology modifiers such as additives that have a thickening effect on the liquid vehicle. . . . Rheology modifiers can include . . . ethyl cellulose.” (*See* Kodas at ¶ [0115].)

In Examples 20, 21, 22 and 27, which have been cited by the Examiner, Kodas employs ethyl cellulose as a thickening agent. (See Kodas at ¶¶ [0273]-[0275] and [0280].) In these Examples, Kodas does not employ any one of the recited binders, which include polystyrene, polyethylene terephthalate or one or more materials selected from the group consisting of polyvalent phenol compounds, phenol resins, alkyd resins, polyester resins and epoxy resins. In other words, the presently recited binder does not include ethyl cellulose, and Kodas fails to employ any one of the recited binders.

Accordingly, the cited Examples of Kodas cannot be said to disclose or fairly suggest the use of the recited binder in an amount of 0.78 to 2.36 parts by weight based on 100 parts by weight of the recited particulate silver compound. (See present Claims 1 and 2.)

In view of the above, reconsideration and withdrawal of the Section 102/103 rejection of Claims 1-15 based on Kodas are respectfully requested.

(d) Referring to Paragraph No. 3 on page 6 of the Office Action, Claims 1-2, 5-8, 10-11 and 13-14 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Pub. No. 2004/0144958 ("Conaghan"). In addition, referring to Paragraph No. 4 on page 7 of the Office Action, Claims 3-4, 9 and 15 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Conaghan and Kodas. Further, referring to Paragraph No. 5 on page 9 of the Office Action, Claims 4, 7 and 10 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Conaghan.

Applicants traverse and respectfully request the Examiner to reconsider in view of the Amendments to the claims and the following remarks.

Conaghan discloses that:

The present application provides conductive ink compositions into which adhesion promoting compounds are incorporated to improve adhesion of the ink compositions to various substrates in the manufacture of electrical conductors. Accordingly, the invention provides a conductive ink composition comprising a reactive organic medium, metal powder or flake, and an adhesion promoting additive. The ink composition may also include an organic liquid vehicle to facilitate mixing and application of the mixture onto the substrate. The ink compositions may further include other additives commonly used in conductive ink compositions.

(See Conaghan at ¶ [0005].)

In addition, Applicants respectfully request the Examiner to consider paragraphs [0014] and [0015] of Conaghan's disclosure:

The reactive organic medium provides the environment in which the metal powder mixture is bonded together to form a well-consolidated conductor. The reactive organic medium has, or can form, a bond to the metal via a hetero-atom. The hetero-atom can be oxygen, nitrogen, sulfur, phosphorous, arsenic, selenium or other nonmetallic element, and preferably is oxygen, nitrogen or sulfur. The hetero-atom bond is weaker than the bonds holding the organic moiety together, and is thermally broken to deposit the metal. In most cases the reaction is reversible, so that acid or other organic residue can react with the metal to reform the metallo-organic compound. The reactive organic medium compositions can be made by methods well known in the art and are capable of decomposition to the respective metals at relatively low temperatures. Reactive organic medium compounds are generally described in, e.g., U.S. Pat. No. 6,379,745.

Many classes of organic compounds can function as the reactive organic medium. The reactive organic medium preferably comprises any metallo-organic compound which is readily decomposable to the corresponding metal, i.e., a metallo-organic decomposition compound, an organic reagent which can react with the metal to produce such a compound, or mixtures thereof. Examples of suitable reactive organic mediums are metal soaps and the corresponding fatty acids. Other examples are metal amines and metal mercapto compounds and their corresponding amino and sulfide precursors. Specific examples of preferred reactive organic medium constituents are the carboxylic acids and

the corresponding metallic soaps of neodecanoic acid and 2-ethyl hexanoic acid with silver and copper, such as silver neodecanoate.

(See Conaghan at ¶¶ [0014] and [0015].)

In view of the above-reproduced sections of Conaghan, one of ordinary skill in the art would understand that the “reactive organic medium” of Conaghan is clearly disclosed as “any metallo-organic compound which is readily decomposable to the corresponding metal, i.e., a metallo-organic decomposition compound, an organic reagent which can react with the metal to produce such a compound, or mixtures thereof.”

Accordingly, one of ordinary skill in the art would readily appreciate that the “reactive organic medium” of Conaghan is completely different from silver oxide and silver carbonate. Indeed, one of ordinary skill in the art would realize that silver oxide and silver carbonate would actually be excluded from the reactive organic medium taught by Conaghan.

Nevertheless, the Examiner takes the position that “[i]t would have been obvious to a person of ordinary skill in the art to substitute the silver salt in the ink composition of Conaghan with either silver oxide or acetate or carbonate of Kodas et al as functional equivalent with reasonable expectation of success because the genus of silver salts of Kodas et al encompasses the species of silver neodecanoate of Conaghan, and they have the same common utility of forming conductor patterns at low temperatures over the polymeric substrates.” (See Office Action at p. 8, ll. 16-20.)

Applicants respectfully disagree. For *at least* the reasons discussed above, one of ordinary skill in the art would not have combined the teachings of Conaghan and Kodas to arrive at the presently recited conductive compositions.

Reconsideration and withdrawal of the rejections based on Conaghan, and Conaghan in combination with Kodas, are respectfully requested.

(e) Referring to page 10 of the Office Action, Claims 1-15 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as allegedly being unpatentable over claims 1, 4-10 and 14-24 of copending Application No. 10/500,124 - as amended on September 30, 2007 - in view of Kodas.

Without acquiescence or conceding to the merits of the rejection, Applicants respectfully request the Examiner to reconsider the nonstatutory obviousness-type double patenting rejection based on the amendments to independent Claims 1 and 2.

(f) In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the local, Washington, D.C., telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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CUSTOMER NUMBER

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Michael G. Raucci
Registration No. 61,444